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Safety Precautions



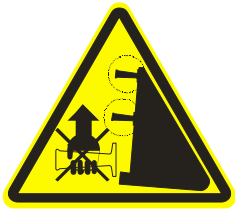
Warning

- I This manual is an integral part of the machine. Please read carefully.
- I Keep the manual for later use when maintaining the machine.
- I This machine can only be used for the designated purposes. Never use it for any other purpose.
- I The manufacturer is not held responsible for the damage incurred by improper use or use other than the intended purpose.

Precautions

- I This equipment must be operated by qualified personnel who have gone through special training programs. Any modification or change of application range to this machine may cause direct or indirect damages to equipment without obtaining permission from manufacturer or not following the instruction of the manual.
- I KWB-408 should be installed on the stable ground.
- I Do not put KWB-408 in a place with extreme temperature or moisture, or near the heating system, water tap, air-humidifier or furnace.
- I Keep the machine from dust, ammonia, alcohol, thinner or spraying binder.
- I People who are not operating the machines should be kept away when it is used.
- I Pay special attention to the safety marks stuck on the machine.
- I Do not touch or approach the moving parts by hand or other body parts when the machine works.
- I Do not remove the safety device or keep it from working properly.
- I When the machine is moved, only exert force on the chassis. Never exert force on the principal shaft under any condition. Please carry and place it with great care.

Descriptions for Safety Signs



- I Do not exert force on the hanging handle to avoid falling of the machine.



- I The wheel protection guard must be put down before pressing START button of the machine to avoid any injury.

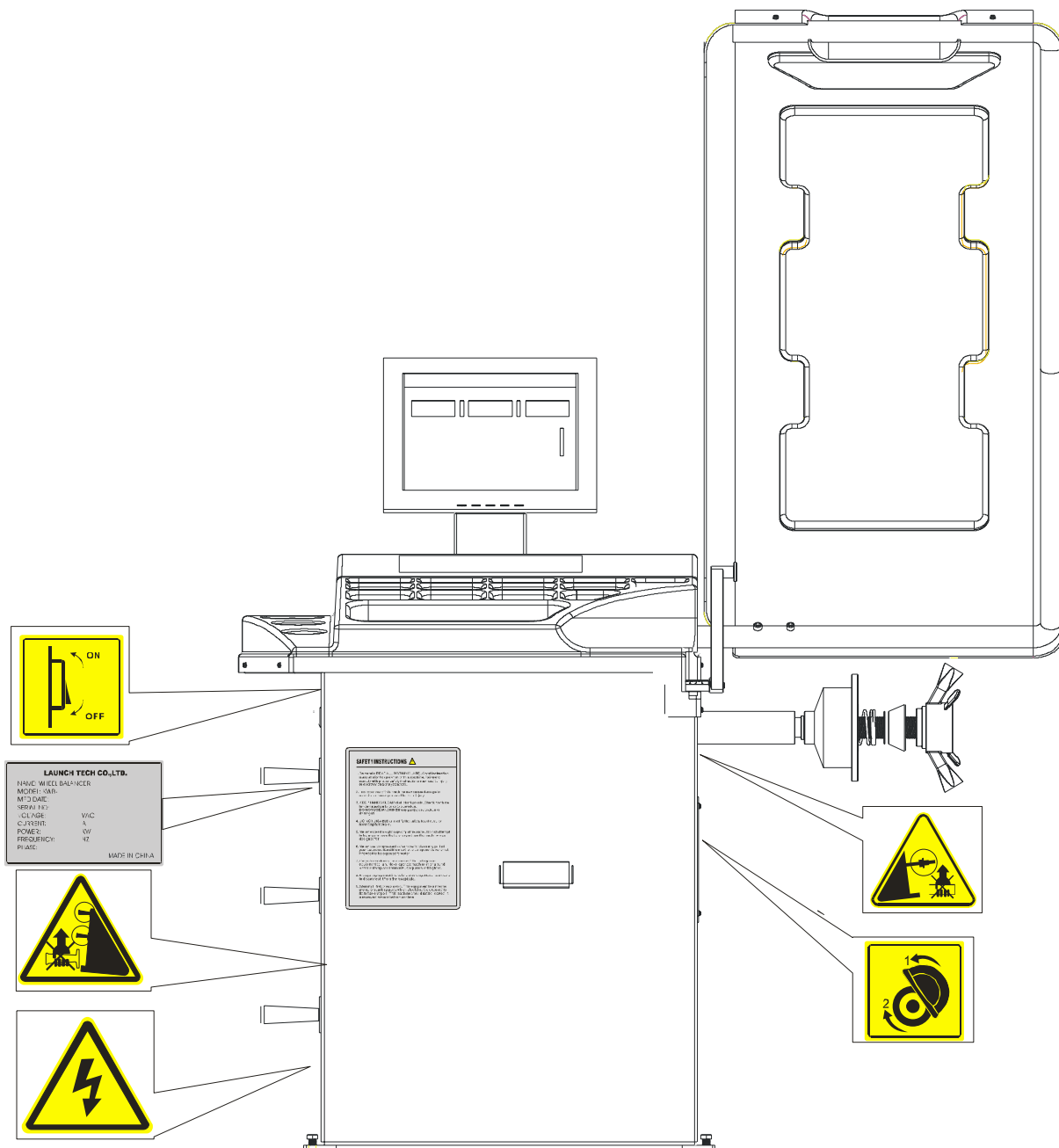


- I High voltage power!
Danger!



- I Do not exert force on the balance shaft when the machine is transported.

The Positions of Safety Signs



- u** Please replace the safety signs if they get blurred or lost.
- u** When one or more safety signs get lost, don't operate the machine.
- u** The safety signs must be kept within the sight of the operator.

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Introduction

Usage

The KWB-408 wheel balancer features good design, simple operation, strong functions and high measurement precision, which make it ideal equipment for measuring the dynamic balance of the wheel. It can be used for balancing small and medium size tires. It can also be a great help in car repair garage and tire shops.

Features

- I High aptitude, good stability, and high equilibrating precision.
- I Matching function between the tyre and the hub.
- I Standard computation and calibration function eliminate the measurement deviation and ensure the test accuracy.
- I Different balance modes are available to various wheels.
- I Quick and accurate test may reduce your working intensity and improve your working efficiency.
- I Simple operation
- I Extra-large digital display

Working Principle

Only when CPU performs self-test and displays normal information of all units can the user start the balancing operation. CPU controls the running of principal shaft via driving interface during balancing operation. The imbalanced signal detected by the balance sensor is transmitted to CPU interface through A/D converter. CPU analyzes comprehensively both the imbalance signal and the angle signal of principal shaft, calculates the imbalance value, and then displays the result through LED unit. Man-machine dialogue can be realized through the keyboard and LED unit.

Background Knowledge

The imbalance of the wheel causes wobble of the steering wheel, low adhesion, and wheel jumping, which damages the wheel and shocks absorber and turning parts. It also influences the comfort of steering stability and increases fuel consumption, decreasing economic index of the automobile directly. Balancing operation will eliminate these disadvantages and relative loss.

Technical Parameter

Sizes

Item	KWB-408
Max Height	1352mm
Length	1385mm
Width	1250mm

Net weight

135 kg

Noise

Working noise: <70dB (A)

Measurement Index

Balance Cycle: 7s

Balance Accuracy : $\pm 2g$

Electrical parameter

220V 50/60Hz

110V 60Hz

Application Scope

Item	KWB-408
Rim Diameter	14—24" (356--610mm)
Rim Width	1.5--14" (38--356mm)
Max Wheel Weight	65kg

Working Conditions

Working Temperature: 0℃ — 50℃

Relative Humidity: $\leq 85\%$

Transport/store temperature: 0℃ — 55℃

Altitude: less than 1000m

Structure

008

Wheel protection guard

1

Standardized elements of balancer are shown in the following figure.

Main Structure

KWB-408 wheel balancer structure is shown as in Fig 1.

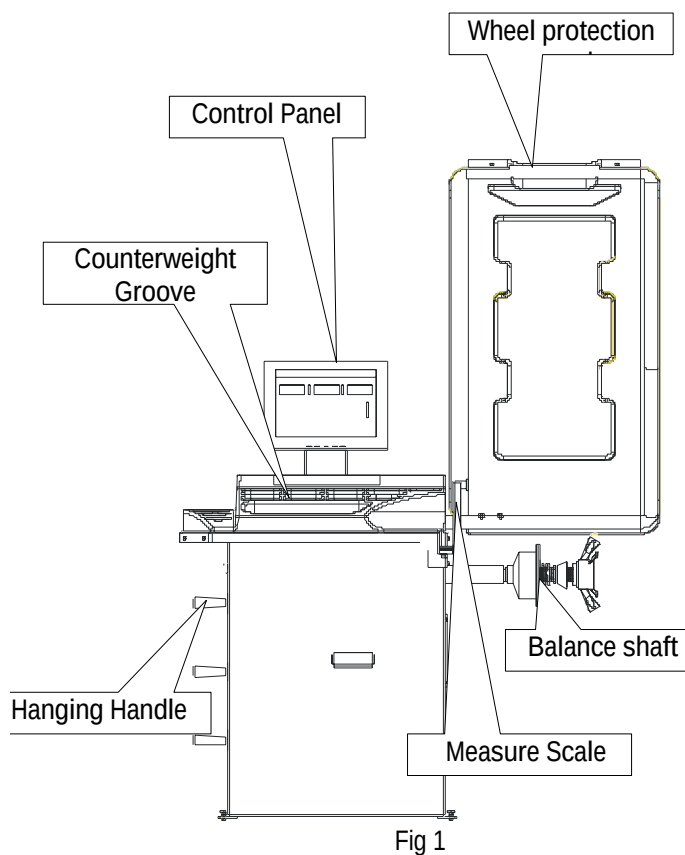


Fig 1

1. Measure scale — To measure the installation distance of the wheel (wheel distance in short) and rim diameter.
2. Control panel — For man-machine dialogue.
3. Hanging handle-- For hanging cones and the wheel width scale
4. Counterweight groove — For putting the counterweight.
5. Balance shaft — For supporting the wheel.
6. Wheel protection guard: For protecting the wheel.

Accessories supplied with the machine are showed in Fig 2

No.	Description	Amount
001	Conical casing	4
002	Main-shaft assembly	1
003	Quick locknut	1
004	Width measure scale	1
005	100g lead weight	2
006	Pliers to attach the balance weight	1
007	Hanging handle	6

Standard parts of KWB-408 wheel balancer

Fig 2

Power Supply Control Board

The position of fuse on power supply of KWB-408 control board is shown as Fig 3.

The parameters of the two fuses F1 and F2 are:

F1: 2A, $\phi 5 \times 20$ mm, 250VAC;

F2: 6A, $\phi 5 \times 20$ mm, 250VAC.

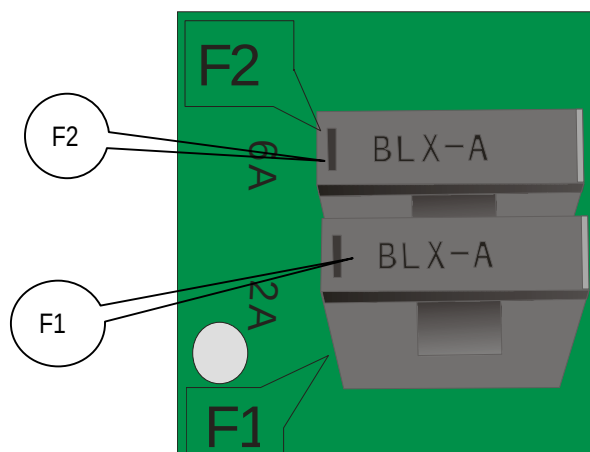


Fig 3

Control Panel

The control panel of KWB-408 is as shown in Fig. 4

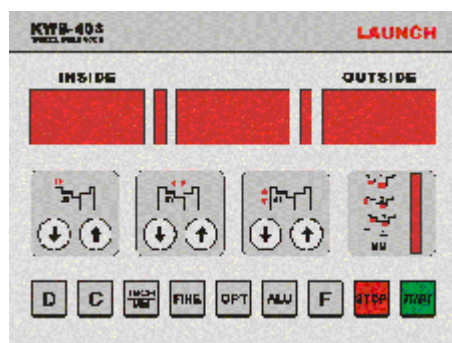
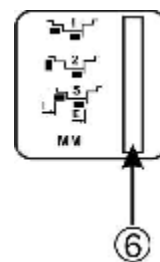
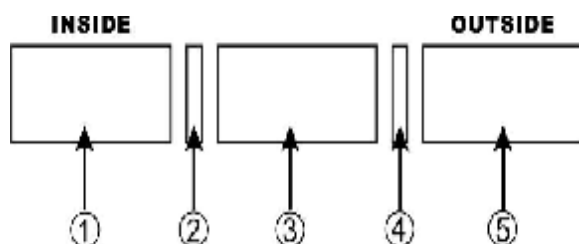


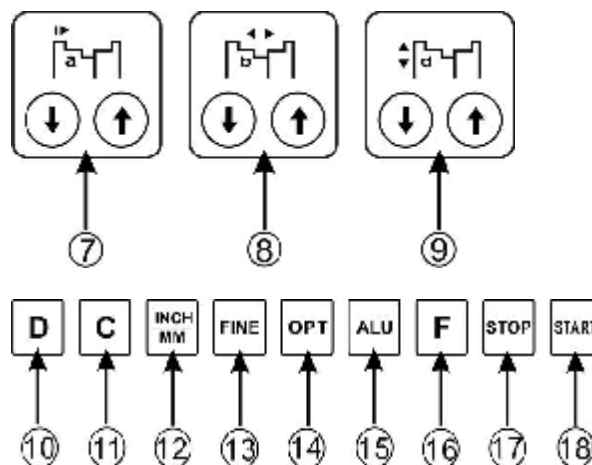
Fig 4

Display panel



1. Display imbalance value or distance size of inner side wheel
2. Indicating inner side balance point when all 5 indicators are lit
3. Display static balance value or rim width
4. Indicating outer side balance point when all 5 indicators are lit
5. Display imbalance value or diameter size of outer side wheel
6. Indication for balance mode and "mm"

Control panel



7. Key (a) to enter the wheel distance manually
8. Key (b) to enter the rim width manually
9. Key (d) to enter the rim diameter manually
10. Key for self-diagnosis (LED self-check) and for self-calibration (required to be used with key C)
11. Key for dis-balance recalculation/self-calibration
12. Selection key between "inch $\leftrightarrow$ mm"
13. High accuracy balance key
14. Dis-balance optimized key
15. Key for balance mode selection
16. Key for dynamic balance or different static balance mode selection
17. Emergency stop button
18. Start button



Caution:

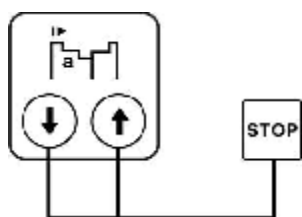
In order to avoid damaging the film of control panel, please don't touch the keys with sharp material.

Hot keys for function conversion

1. [STOP] + [a ↑] + [a ↓] Conversion keys for the measurement unit of "gram/ounce".

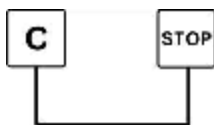
First, please press [STOP] button and hold it, then press [a ↑] and [a ↓] at the same time, the information displayed on the control panel will put out; after a while, please release button [a ↑], [a ↓] and [STOP] in turn, the previous tested data will be redisplayed at once but with another kind of unit system.

Note: The different sequence for releasing the keys may result in the different data displayed, but it is not necessary for operator to perform other operations. Press [Start] button to resume.



2. [STOP] + [C] The keys for measurement mode selection after putting down the wheel protection guard.

Please press [STOP] button and hold it, then press [C] button and hold it; release [C] and [STOP] button in turn, the measurement mode will be alternated between "Put down the wheel protection guard to start measurement" and "Put down the wheel protection guard to start measurement by pressing [START] button".



3. [STOP] + [FINE] The keys for entering the status of measure scale distance calibration. The self-calibration for measure scale is required to perform when starting the balancer each time, otherwise the correct measurement status cannot be entered (the detailed information about self-calibration will be described later).



4. [D] + [C] The keys for outside parameter calibration before measurement.

The keys are used to calibrate the CPU memories corresponding to the wheelbase, rim width and rim diameter of different wheels, so as to ensure the measurement accuracy (it is necessary to calibrate in

both Auto mode and Manual mode).

5. [STOP] + [OPT] Keys for diameter data adjustment of auto measure scale function. The diameter data of different vehicle wheels can be stored into CPU through this operation, and the data can keep stored even after balancer shutdown (the detailed operation will be described later).



Operating Instruction



Caution:

The equipment can only be operated by qualified personnel with special training. Use appropriate tools, protective and safety equipment, wearing protective work clothes, such as blinkers, and working boots.

Preparation



Attention:

- Ø The max weight of the wheel cannot exceed 65kg.
- Ø Remove any counterweight and other foreign body from the wheel before mounting it to avoid any danger. When remove the counterweight, the demounting/mounting pliers supplied with the machine should be used (Fig. 5).
- Ø Clean the contact surfaces between the shaft and the conical casing with alcohol or gasoline before mounting the wheel to avoid any influences on installation accuracy.
- Ø Put the balancer on level ground whenever possible.

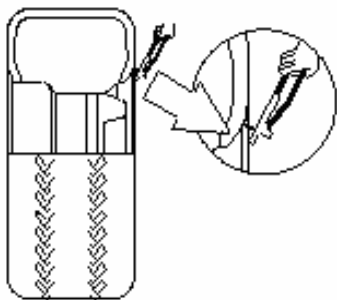


Fig 5

Wheel Mounting

Mounting Method 1

It is suitable for the wheel that can be positioned with its center hole.

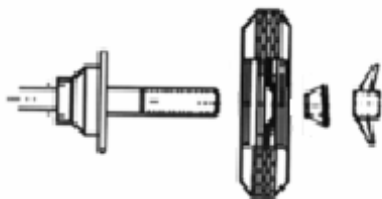
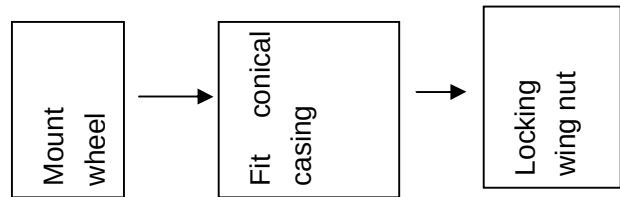


Fig 6

- I Fit the wheel onto the balance shaft close up the flange (Fig 6).
- I Select a right size conical casing, and then tighten the

wheel with a locking wing nut.



Mounting Method 2

This method is suitable for the wheel to be positioned with its central hole, especially when the central position surface cannot be correctly positioned due to deformation.

- I Select a right size conical casing and fit it onto the balance shaft in reverse. See Fig 7.

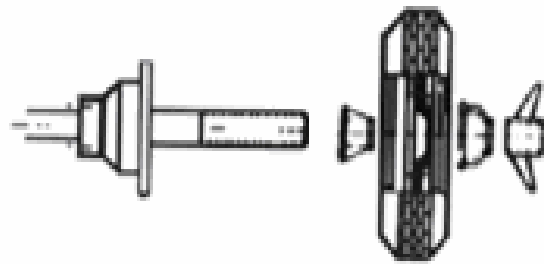
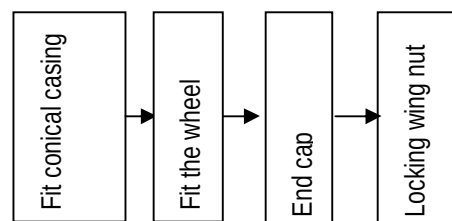


Fig 7

- I Fit a matching end cap (optional) onto the locking wing nut.
- I Fit the wheel onto the conical casing and fasten it with an end cap and a locking wing nut.



General operation

Switch on the Machine

- I Before switching on the machine, please ensure that the power supply selected meet the requirements on the name plate.
- I Turn on the power supply switch on the left side of the machine (Fig 8).

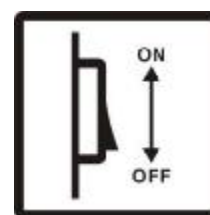


Fig 8

- I The display panel will show the version No. of main board (Fig 9).



Fig 9

- I And then the display panel will show the parameter (default value) of the object to be balanced (Fig 10).

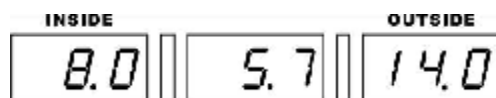


Fig 10

Function Selection

After switching on the wheel balancer, the function status is default status (i.e. the common dynamic balance status), because this function status is selected in common circumstances. More specifically, this function status can be selected in case of the pothook style counterweight on both sides of wheel rim edge.

Only single-side balance is required to be performed for static balance. In this case the whole wheel is taken as having one side surface only.

Double-side balance is required to be performed for dynamic balance.

The lead weight is required to be mounted only on the outside of wheel when performing static balance operation; and that is required to be mounted on both inner side and outside of wheel when performing dynamic balance.

(Note: other function selection and application will be described later).

Entering Wheel Data

It is important for the operator to know how to input data correctly because the wrong data input may directly influence the test result from the next step.

Known $a=5.0"$, $b=6.0"$, $d=15.0"$ (Fig 11).

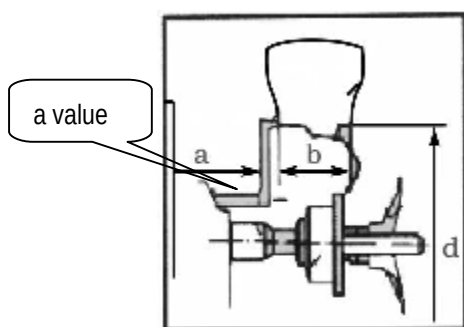


Fig 11

- I Measure the rim width with width scale according to Fig 12.

Read width data

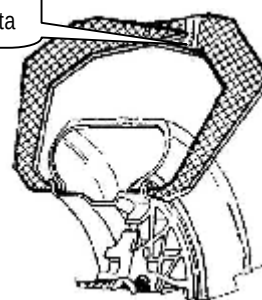
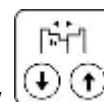


Fig 12



- I Input the data read via Up--Down key
I The control panel will display the information as shown in Fig 13.

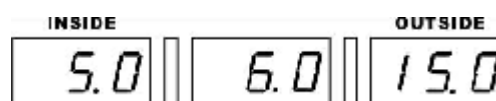


Fig 13

Imbalance value measurement



Attention:

- Ø Make sure to put down the wheel protection guard before pressing [START].
- Ø Do not raise the wheel protection guard when the wheel is rotating. In abnormal situations, press [STOP] first, then turn off the power. Don't raise wheel cover until the wheel stops.
- Ø Do not touch the machine during a wheel spin. Otherwise, the balance effect will be influenced.

The procedures for imbalance value measurement are as follows:

- I Put down the wheel protection guard to start the balancer (there are many kinds of start modes, please refer to the paragraph of "Hot keys for function conversion" for other operating methods), and all LEDs will go out at this moment.
- I After about 7 seconds, the control panel displays the imbalance value of the wheel, as shown in Fig 14.

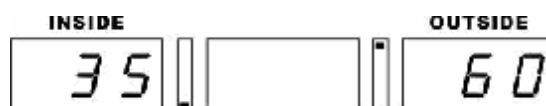


Fig 14

- I Meaning of the information displayed:
- ☆ "35" indicates that the imbalance value of the wheel inner side is 35g;
 - ☆ "OPT" indicates that the imbalance value of this wheel is larger, and should be optimized. Please refer to the paragraph of "OPT Coincidence Balance Operation" for detailed operating procedures;
 - ☆ "60" indicates that the imbalance value of the wheel outside is 60g;

- ☆ If all indicators at one side are lit, it indicates that the highest point at this side of the wheel is the imbalance position.

FINE

- I Press **FINE** key, the control panel will display the actual accurate imbalance value as shown in Fig 15.

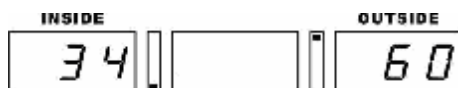


Fig 15

- I Rotate the wheel. If all indicators at the outside of the wheel are on (see Fig 16), it indicates that the highest point at the outside is the imbalance position (see Fig 18). The method to determine the imbalance position for inner side of the wheel is the same as that for outside.

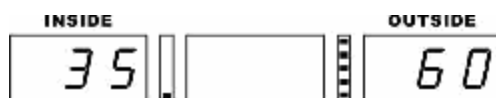


Fig 16

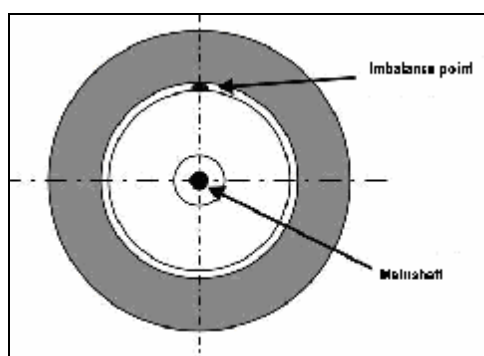


Fig 17

Compensation for wheel imbalance value

- I According to the previous paragraph, attach the relative counterweight on the imbalance point of the rim. Attach the balance weight on the imbalance point as possible as you can, otherwise the compensation error will be produced.
- I Perform the imbalance measurement operation again.
- I The display information of the re-measurement operation is as shown in Fig 18.



Fig 18

- I The meaning of the information displayed:
"000" indicates that the compensation for this side is up to standard (imbalance value < 5g);

FINE

- I Press **FINE** key, the control panel will display the actual accurate imbalance value as shown in Fig 19. The balance operation is successful.



Fig 19



Attention:

Generally speaking, it is up to standard if the imbalance value of the wheel is less than 5g, for the balance weight uses quinary system, i.e. 5g, 10g and 15g, etc.

Static—dynamic balance mode conversion

The method for attaching the balance weight during static balance measurement is different from that during dynamic

balance measurement. Press **F** key to select static

balance mode, and repress **F** key to return to the dynamic balance mode.

- I Lead-attaching method during static balance measurement: If you want to measure the wheel of motorcycle or the wheel of which both sides can not be

attached with balance lead, please press **START** key. After the tested data of imbalance value is displayed,

please press **F** key to select the lead-attaching method for static balance, and then rotate the wheel slowly. When the control panel displays the information as shown in Fig 20, all indicators at the inner side are lit. Attach the balance lead at the inner side of the wheel spoke at this moment (Fig 21).

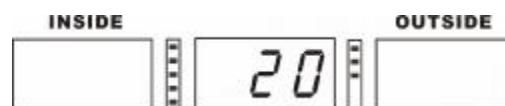


Fig 20

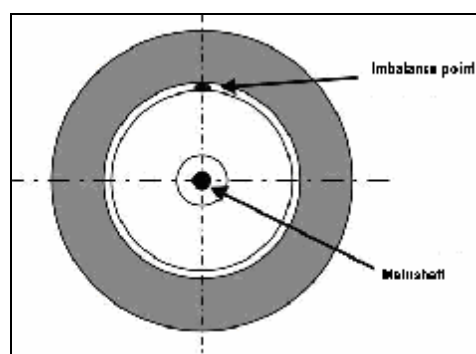


Fig 21

Operating Procedures for Special Balance Mode

ALU Wheel Drum Balance

Keep pressing **ALU** key to switch ALU operating mode. Wheel drum balance (i.e. alloy steel rim balance) includes 3 kinds of mode: ALU—1, ALU—2 and ALU—S. The lead-attaching surface of ALU—S can be set artificially according to the requirement, and can be balanced with implicated counterweight via assistant implicated program. Under ALU—1 and ALU—2 mode, the different platform can be selected to perform the lead-attaching operation according to the specific shape of the wheel drum section (see Fig 22 and Fig 23). In this way, the accurate balance position and the more accurate balance result can be

obtained. Press **ALU** key one time, the ALU—1 mode is entered; press **ALU** key two times in succession, the

ALU—2 mode is entered; press **ALU** key three times in succession, the ALU—S mode is entered. You can exit from

ALU mode by directly pressing **F** key.

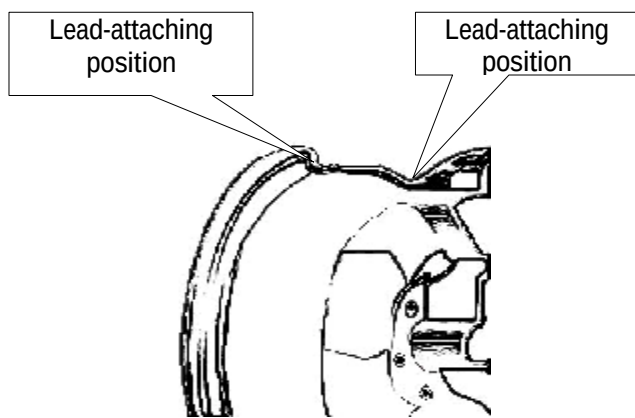


Fig 22

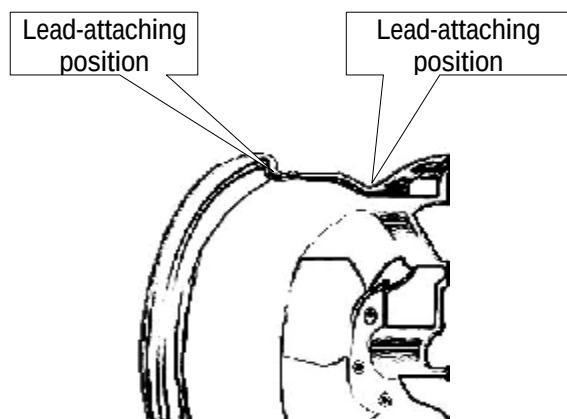


Fig 23



Attention:

ALU mode will be faulty easily when the distance between the inside surface of the rim and the outside surface of the cabinet is more than 15cm.

When you select ALU mode, "ERR 3" will occur, it indicates that the value on the solution surface of the imbalance value is more than 999 gram. In this case ALU mode operation cannot be performed with the current distance between the wheel and the cabinet.

ALU—1 Balance Mode

After selecting ALU—1 mode, the indicators are as shown in Fig 24.

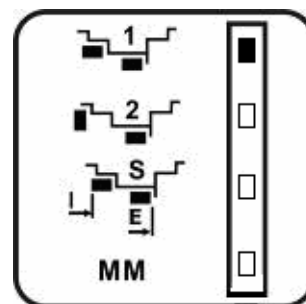


Fig 24

Press **START** key to recalculate the imbalance value of inner side and outside, the control panel will display the information as shown in Fig 25.



Fig 25

The specific operating procedures are as follows:

Rotate the wheel, let all indicators at inner side (or outside) lit. Place the lead weight side with sticking protection paper upwards, and then lift the protection paper as shown in Fig 26.

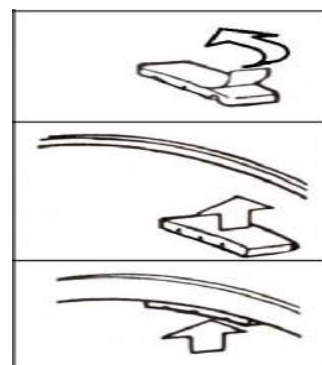


Fig 26

Move the lead weight slowly to the lead-attaching position, and attach it when arriving at the lead-attaching position.

After finishing the lead-attaching operation for inner side and outside of the wheel, ALU—1 operation is finished. Perform the rotating test one more time to identify the balance effect.

Note: Keep the rim surface clean to ensure the lead weight stuck on it firmly. Perform lead-attaching operation, if necessary, after cleaning the rim surface with appropriate amount of organic solvent or detergent.

ALU—2 Balance Mode

After selecting ALU—2 mode, the indicators are as shown in Fig 27.

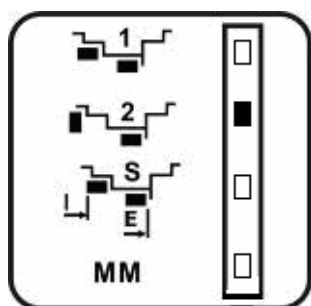


Fig 27



Press **START** key to recalculate the imbalance value of inner side and outside. The control panel will display the information as shown in Fig 28.



Fig 28

The specific operating procedures are as follows:

Rotate the wheel so that all indicators at inner side are lit. The highest point of the rim inner side edge is the inner side balance point when all indicators are lit. Please attach the lead weight at the inner side of the rim according to the displayed value.

Continue to rotate the wheel, so that all indicators at the outside of the wheel are lit. The outside balance point is in the line parallel to the axis of the highest point close to the outside of the rim inside wall. Place the lead weight side with sticking protection paper upwards, and then lift the protection paper as shown in Fig 28.

Move the lead weight slowly to the lead-attaching position, and attach it when arriving at the lead-attaching position.

Finish the lead-attaching operation for inner side and outside of the wheel is the end of ALU—2 operation. Perform the rotating test one more time to identify the balance effect.

ALU—S Balance Mode

ALU—S balance mode is suitable to very special wheel rim.

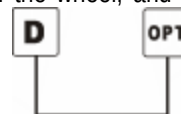


Attention:

Please input the number of wheel spoke before measurement.

Step 1: Input the number of the wheel spokes

After inputting the data of the wheel, and before selecting



ALU mode, please press **D** key first. The control panel will display the information as shown in Fig 29.



Fig 29

Press <↑> or <↓> key to set the number of the wheel



spokes (3-12). Press **D** key again to confirm. The control panel will display the information as shown in Fig 30.



Fig 30



Attention:

If it is necessary to resolute the imbalance value to wheel spokes, the number of the wheel spokes must be input; if not, please skip Step 1 directly.

Step 2: Size-inputting method in ALU—S balance mode

al and aE indicate the lead-attaching position at the inner side of the wheel rim; dl and dE indicate the lead-attaching position at the outside of the wheel rim.



Press **START** key to perform the dynamic balance operation one time, and then select ALU—S balance mode. The control panel will display the information as shown in Fig 31.

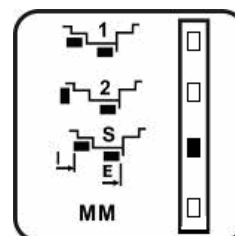


Fig 31

Input the data for lead-attaching position according to the data displayed in Fig 32 and Fig 33.

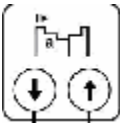
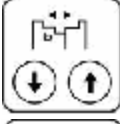
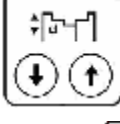


Fig 32



Fig 33

Let $dE = 0.8 dI$ (default value). If dI changed, dE will return to the default value. The length of the counterweight is automatically considered as 14mm when the system calculates the distance between the balancer and the center of gravity of the counterweight.

- a): Press  key to change the value of aI .
- b): Press  key to change the value of dI .
- c): Press  key to change the value of aE .
- d): Keep pressing  key and press  key to change the value of dE (Fig 33).

At this moment, press  key to enter the interface for spoke number setting.

Step 3: Calculating imbalance value

After inputting the data of lead-attaching position, please rotate the wheel. If it is necessary to resolute the imbalance

value, please press  key to perform measurement, so as to get a new imbalance value (Fig 34).



Fig 34

Step 4: Resolution for imbalance value

Rotate the wheel to place any one of the wheel spokes on 12 o'clock position as shown in Fig 35. Press

 key (keep  pressed, and then

press  key, the control panel will display the information as shown in Fig 36.

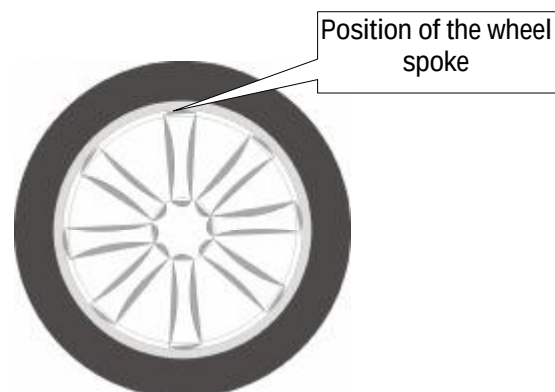


Fig 35



Fig 36

The resolution of the imbalance value is into 20g and 10g.

Lead-attaching operation

The left screen displays the imbalance value at the inner side of the wheel rim. Rotate the wheel slowly, pull out the width scale to aI lead-attaching position when all indicators at inner side of the wheel are lit (Fig 34). Attach the counterweight on 12 o'clock position as shown in (Fig 37).

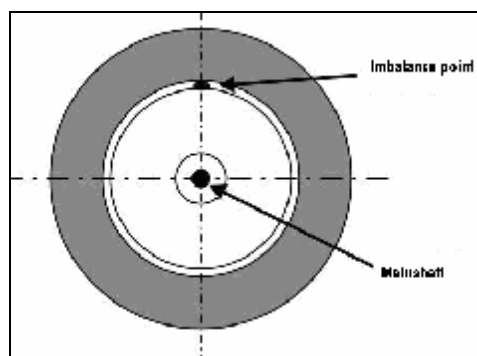


Fig 37

Rotate the wheel slowly until the right screen displays a imbalance value as shown in Fig 38.

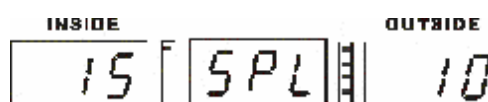


Fig 38

Pull out the measure scale to dI lead-attaching position. Attach the counterweight on 12 o'clock position as shown in (Fig 37).

Rotate the wheel slowly again until the right screen displays the second imbalance value as shown in Fig 39.



Fig 39

Pull out the measure scale to dl lead-attaching position. Attach the counterweight on 12 o'clock position as shown in (Fig 37).

Wheel balance operation is finished.

Equipment Calibration

Self-calibration Program of the Balancer



Attention:

The self-calibration program should be carried out after first installation or if the measurement accuracy of the equipment is uncertain, to ensure the measurement accuracy of the balancer.

Turn on the power supply switch of the balancer, install a wheel with medium size (15" --17"), input the data of the

wheel rim and press  key at the same time. The control panel will display the information as shown in Fig 40.



Fig 40



Release  key, put down the wheel protection guard, and press  key to rotate the main-shaft. The control panel will display the information as shown in Fig 41 when the main-shaft stops rotating.



Fig 41

Put down the wheel protection guard, and attach 100g (3.5oz) counterweight on the outside of the wheel rim. Put

down the wheel protection guard again, and press  key to re-rotate the main-shaft. The control panel will display the information as shown in Fig 42 when the main-shaft stops rotating.



Fig 42

The self-calibration is finished, and the self-calibration data is stored in computer memory even after the balancer shutdown. The wheel balance operation can be performed after above operating procedures.

Self-Testing Program (Testing Position Sensors and Indicators)



Press  key, from left to right, the indicators flash one by one, and the control panel will display the information as shown in Fig 43.



Fig 43

The position sensor can be tested at that moment. Rotate the wheel manually and slowly, indicator ALUI starts flashing, and "0" will appear on the right screen when "0" position on the main-shaft passes across the photoelectric sensor as shown in Fig 44.

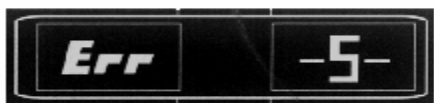
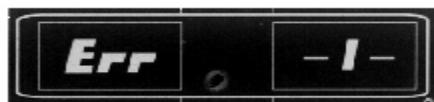
Fig 44

Once the wheel turns by one circle, the [0] will appear on right screen one time. When the wheel rotates to the reverse direction, the indicator ALUS will start flashing.

Troubleshooting

Error Messages of Self-diagnosis

Error messages of self-diagnosis are showed below:



1. Failures of the single phase motor or the power supply board.
2. Low rotating speed or no wheel mounted on the machine (with tire).
3. The imbalance value is too big. Change another wheel to test.
4. Errors with power supply or position sensor.
5. The wheel protection guard is not put down.
7. Damages of the memory or losses of the signal.
8. Wrong calibration program or damages of the computer board or the sensor

Frequent Errors and Solutions

Symptom	Cause	Solution
No display when turning on the machine.	1. Check whether the outer power supply is normal. 2. Failures of the computer board	1. Check the outer power supply. 2. Replace the computer board.
Normal display but failures of [START] button, and a, b and d inputting keys.	1. Touch switches are not sensitive. 2. Machine dies.	1. Open the cover and insert the pins of touch switches tightly. 2. Restart the machine.
Normal display but unable to stop after start, with wrong imbalance value.	1. Loose connection between the computer board and the power supply board. 2. Failures of the computer board	1. Tighten the connection between the computer board and the power supply. 2. Replace the computer board.
Slow start, bad brake, and inaccurate imbalanced value	The driving belt becomes loose.	Replace the driving belt or adjust tension of the V belt.
Normal work but with inaccurate imbalance value	1. Calibrated value changes. 2. The body is not stable. 3. Influences of cones or locking wing nuts. 4. The wheel is not mounted tightly. 5. Unstable power supply. 6. Big fluctuation of power voltage. 7. Failures of the raster display and its circuit.	1. Re-calibrate it according to the User's manual. 2. Solve failures according to check result. 3. If the failure still exists, replace the computer board. 4. Re-fasten quick locknuts.



Attention:

If the problems can not be fixed through above solutions, please contact the technical support personnel.

Maintenance



Attention:

Only the specialized technician can do the maintenance. Before any maintenance is performed, disconnect the power and keep the plug within the sight of the maintenance personnel.

To keep the wheel balancer in good condition and to prolong its work life, it is necessary to do regular maintenance according to the instructions of this manual. Otherwise, the normal operation and reliability of the machine will be influenced, or personal injury would be caused.

- I Keep the machine and working area clean and prevent dust from entering the moving parts.
- I Keep the balance shaft clean (clean with diesel oil or alcohol) and lubricated.
- I Regularly calibrate the machine. See *Installation and Parts Manual* for details.
- I Regularly check and adjust the tension of the belt.
- I Check all connecting parts and bolts regularly and tighten them if necessary.

Storage and Scrapping

Storage

When the equipment needs to be stored for a long extended period of time:

- I Disconnect the power.
- I Lubricate all the parts that need to be lubricated: main shaft and etc.
- I Protect the machine with plastic cover against dust.

Scrapping

When the equipment can no longer be used, disconnect the power and dispose it in accordance with the local law and regulation.

Warranty

THIS WARRANTY IS EXPRESSLY LIMITED TO PERSONS WHO PURCHASE LAUNCH PRODUCTS FOR PURPOSES OF RESALE OR USE IN THE ORDINARY COURSE OF THE BUYER'S BUSINESS.

LAUNCH products is warranted against defects in materials and workmanship for one year from date of delivery to the user. This warranty does not cover any part that has been abused, altered, used for a purpose other than for which it was intended, or used in a manner inconsistent with instructions regarding use. The exclusive remedy for any automotive meter found to be defective is repair or replacement, and LAUNCH shall not be liable for any consequential or incidental damages. Final determination of defects shall be made by LAUNCH in accordance with procedures established by LAUNCH. No agent, employee, or representative of LAUNCH has any authority to bind LAUNCH to any affirmation, representation, or warranty concerning LAUNCH products.

Attn: Overseas Department
LAUNCH TECH. CO., LTD.
LAUNCH Industrial Park,
North of Wuhe Avenue,
Banxuegang Industrial Park,
Longgang District,
Shenzhen, Guangdong Province,
P. R. China
P.C.: 518129

Declaration

The above warranty is able to replace any warranty in other forms.

Order Information

Replaceable and optional parts can be ordered directly from your LAUNCH authorized supplier. Your order should include the following information:

1. Quantity
2. Part No.
3. Item description

Customer Service

If you have any questions on the operation of the machine, please contact us:

Tel: 86-755-84528288, or fax: 86-755-84528872.

If your machine requires repair service, return it to the manufacturer with the sales invoice, the warranty sheet, the quality certificate and a note describing the problem. If the machine is determined to be in warranty, LAUNCH will repair or replace at no charge, also repay the transport fee to the customer. If the machine is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Our address is as follows: